

REMARKS/ARGUMENTS

Applicant thanks the Examiner for the allowance of claims 1-14, 16-27, 29-41, and 45-56.

The Examiner has rejected claims 42-44 under 35 U.S.C. §103(a) as being unpatentable over U.S. 5,737,536 to Hermann et al.

The Rejection of Claims 42-44

The cited reference fails to teach or suggest at least the italicized features of independent claim 42:

42. In a cache server having a plurality of memory addresses for storing information, a first set of memory addresses being more accessible than a second set of memory addresses and both the first and second sets of addresses being in a common cache server, a method comprising:

comparing first and second hot reference counters corresponding to first and second information to determine which of the first and second information is more frequently requested, wherein the comparison of the first and second hot reference counters indicates that the first information has been more frequently requested, over a first selected time interval, than the second information;

storing the first information at an address in the first set of memory addresses and the second information at an address in the second set of memory addresses;

thereafter, comparing the first and second hot reference counters to determine which of the first and second information is more frequently requested, wherein the comparison of the first and second hot reference counters indicates that the second information has been more frequently requested, over a second selected time interval, than the first information; and

storing the second information at an address in the first set of memory addresses and the first information at an address in the second set of memory addresses.

Hermann et al. is directed to a client/server system providing methods of using information stored locally on a client even after the client has modified data on the server. A buffer is allocated in the memory of the client for storing a local copy of the desired information. The system then sets an “invalid” flag for indicating that information stored in the buffer is invalid; that is, the buffer does not yet hold a valid copy of the desired information. The system then transfers the desired

information from the server into the buffer and, in doing so, resets the flag to indicate that the buffer is now valid - a correct copy is stored. At a periodic time interval, one selected to optimize the data transfer characteristics of the network, the invalid flag is set again for marking the buffer as (possibly) invalid. When the information is required, if the system detects that the invalid flag has been tripped the system transfers the desired information from the server into the buffer and resets the flag (to "valid"). With a copy of the information of interest locally cached, the client may proceed to operate on the copy residing in the rapid-access memory, instead of repeatedly re-reading (transferring) the desired information from the server.

Although the Examiner concedes that Hermann et al. does not "specifically disclose comparing first and second hot reference counters", she states that "it would have been obvious to compare the counters in order to come up with frequently accessed information in order to speed up access to data." Applicant disagrees. The amended claims are directed to a storage technique in which "hot" or frequently requested information is stored in first set of memory addresses in a cache server while "colder" or less frequently requested information is stored in a second (less accessible) set of memory addresses in the cache server. As content becomes "hot" or "cold", it is moved back and forth between the two sets of memory addresses. The "hotness" or "coldness" is monitored using hot reference counters. Such a methodology is neither suggested nor implied, or obvious, based on Hermann et al. Hermann et al. is silent about hot reference counters to measure hotness let alone the transferring of information between first and second sets of addresses in a common cache server based on relative hotness.

Accordingly, the pending claims are allowable.

The dependent claims provide further bases for allowance.

By way of example, the Examiner has found numerous dependent claims to be allowable if restated as independent claims.

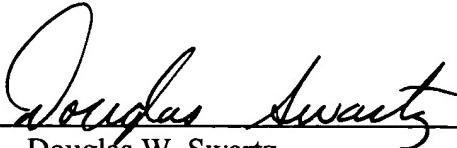
By way of example, dependent claim 43 is requires the first set of addresses to be located by the server in a search before the second set of addresses and the first set of addresses to be higher in a content stack of the cache server than the second set of addresses. It further requires the additional step of:

setting first and second values of an expiration timer corresponding, respectively, to the first and second information based on at least one of the information's popularity, maximal age, and last-modified time, the expiration timer value determining a storage life of each of the corresponding first and second information at a selected memory address.

Based upon the foregoing, Applicants believe that all pending claims are in condition for allowance and such disposition is respectfully requested. In the event that a telephone conversation would further prosecution and/or expedite allowance, the Examiner is invited to contact the undersigned.

Respectfully submitted,

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